

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the Application.

Listing of Claims:

1-83. (Cancelled)

84. (Previously presented) A method for purifying single-wall carbon nanotubes comprising:

- a) providing a mixture containing single-wall carbon nanotubes and at least one other reaction product formed in a method for producing single-wall carbon nanotubes;
- b) heating the mixture under oxidizing conditions; and
- c) recovering a purified product having a higher concentration of single wall carbon nanotubes than the mixture.

85. (Previously presented) The method of claim 84 wherein the oxidizing conditions provide for derivitization of at least one of the single-wall carbon nanotubes.

86. (Previously presented) The method of claim 84 wherein the oxidizing conditions provide for esterification of at least one of the single-wall carbon nanotubes.

87. (Previously presented) The method of claim 84 further comprising reacting at least a portion of the at least one other reaction product to form a compound, wherein the compound is capable of being dissolved or suspended in an aqueous solution.

88. (Previously presented) The method of claim 84 wherein the purified product is suspended in a liquid.

89. (Previously presented) The method of claim 84 wherein the purified product is a solid product.

90. (Previously presented) The method of claim 89 wherein the solid product is recovered by a method selected from the group consisting of settling, filtration and combinations thereof.
91. (Previously presented) The method of claim 84 further comprising storing the purified product in water.
92. (Previously presented) The method of claim 89 wherein the solid product comprises a mat.
93. (Previously presented) The method of claim 92 wherein the mat comprises at least one material selected from the group consisting of ropes of single-wall carbon nanotubes, bundles of single-wall carbon nanotubes and combinations thereof.
94. (Previously presented) The method of claim 84 further comprising drying the purified product.
95. (Previously presented) The method of claim 94 wherein the drying is at about 850°C in a hydrogen gas atmosphere.
96. (Previously presented) The method of claim 88 wherein the purified product suspended in the liquid comprises at least 80% by weight single-wall carbon nanotubes.
97. (Previously presented) The method of claim 88 wherein the purified product suspended in the liquid comprises at least 90% by weight single-wall carbon nanotubes.
98. (Previously presented) The method of claim 88 wherein the purified product suspended in the liquid comprises at least 95% by weight single-wall carbon nanotubes.
99. (Previously presented) The method of claim 88 wherein the purified product suspended in the liquid comprises at least 99% by weight single-wall carbon nanotubes.
100. (Previously presented) The method of claim 89 wherein the solid product comprises at least 80% by weight single-wall carbon nanotubes.

101. (Previously presented) The method of claim 89 wherein the solid product comprises at least 90% by weight single-wall carbon nanotubes.

102. (Previously presented) The method of claim 89 wherein the solid product comprises at least 95% by weight single-wall carbon nanotubes.

103. (Previously presented) The method of claim 89 wherein the solid product comprises at least 99% by weight single-wall carbon nanotubes.

104. (Previously presented) A method for purifying single-wall carbon nanotubes comprising:

- a) providing a mixture comprising single-wall carbon nanotubes, an amorphous carbon deposit and at least one other reaction product;
- b) heating the mixture under oxidizing conditions sufficient to oxidize the amorphous carbon and the at least one other reaction product; and
- c) recovering a purified product that comprises at least 80% by weight single-wall carbon nanotubes.

105. (Previously presented) The method of claim 104 wherein the oxidizing conditions are sufficient to remove at least a portion of the amorphous carbon deposit and at least portion of the at least one other reaction product.

106. (Previously presented) The method of claim 104 wherein the purified product is recovered by a method selected from the group consisting of settling, filtration and a combination thereof.

107. (Previously presented) The method of claim 104 wherein the oxidizing conditions comprise heating the mixture in an aqueous solution of an inorganic oxidant.

108. (Previously presented) The method of claim 107 wherein the aqueous solution is heated to reflux.

109. (Previously presented) The method of claim 106 wherein the inorganic oxidant comprises a chemical selected from the group consisting of nitric acid, sulfuric acid, hydrogen peroxide, potassium permanganate and mixtures thereof.

110. (Previously presented) The method of claim 106 wherein the aqueous solution comprises nitric acid at a concentration between 2.0 and 2.6 Molar.

111. (Previously presented) The method of claim 104 further comprising removing at least one esterified amorphous carbon deposit, wherein the at least one esterified amorphous carbon deposit is formed under the oxidizing conditions.

112. (Previously presented) The method of claim 104 further comprising a saponification treatment of the mixture.

113. (Previously presented) The method of claim 112 wherein the saponification treatment comprises contacting the amorphous carbon deposit with a basic solution.

114. (Previously presented) The method of claim 112 wherein the saponification treatment further comprises sonication.

115. (Previously presented) The method of a claim 113 wherein the basic solution comprises sodium hydroxide.

116. (Previously presented) The method of claim 112 comprising neutralizing the mixture with an acid.

117. (Previously presented) The method of claim 116 wherein the acid is selected from the group consisting of hydrochloric acid, sulfuric acid, nitric acid and mixtures thereof.

118. (Currently amended) A method for purifying a mixture comprising single-wall carbon nanotubes and amorphous carbon contaminate, the method comprising the steps of:

(a) heating the mixture under oxidizing conditions sufficient to remove the ~~the~~ amorphous carbon; and

(b) recovering a product comprising at least about 80% by weight of single-wall carbon nanotubes.

119. (Previously presented) The method of claim 118 wherein the product recovered is baked in hydrogen gas.